



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,301	05/11/2001	Daniel Marcu	06666-078001	7801
20985	7590	09/09/2005	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			SPOONER, LAMONT M	
			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/854,301	Applicant(s) MARCU ET AL.	
	Examiner Lamont M. Spooner	Art Unit 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) 30-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/5/03, 3/18/03</u> . | 6) <input checked="" type="checkbox"/> Other: <u>#3 IDS cont. 7/23/01.</u> |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-29 in the reply filed on 4/26/2005 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 7, lines 2 and 3, "are sufficient to derive the discourse tree of any input text segment". The Examiner is unable to find anywhere in the disclosure, how a discourse tree can be derived for any input text segment, (i.e. input text segment "de", the input text being "deer"). Further clarification is necessary.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6, and 8-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Marcu (The Rhetorical Parsing Summarization, and Generation of Natural Language Texts).

As per **claim 1**, Marcu teaches a computer-implemented method of determining discourse structures, the method comprising:

generating a set of one or more discourse parsing decision rules based on a training set (p.165-Fig. 5.1-"text T" as the training set", "1-17" as the rules, p.10 para. 2); and determining a discourse structure for an input text segment by applying the generated set of discourse parsing decision rules to the input text segment (p.9. para. 4 lines 3, 4, "the rhetorical parsing algorithm...")

As per **claim 2**, Marcu teaches claim 1, and further teaches the training set comprises a plurality of annotated text segments (p. 18. para. 1, 2, section "2.1"-his brackets around text) and a plurality of elementary discourse units (EDUs) (ibid-the information between his brackets, his "clause like spans ... elementary units of text), each annotated text segment being associated with a set of EDUs (ibid, p. 18 para.1, 2-his "clause like spans" within the brackets thereby associated) that collectively represent the annotated text segment (ibid-p.20.Fig. 2.1-the collective annotated segment as the tree like discourse structure).

As per **claim 3**, Marcu teaches claim 2, and further teaches the annotated text segments are built manually by human annotators (p.9.para 1-2 "I associated with each cue phrase information that..."-as annotation).

As per **claim 4**, Marcu teaches claim 2, and further teaches wherein generating the set of discourse parsing decision rules comprises iteratively performing one or more operations on a set of EDUs to incrementally build the annotated text segment associated with the set of EDUs (p.9 para. 1-2-"each cue phrase with ...the determination of the boundaries of the elementary textual units found in its vicinity" as building the annotated text segment-the elementary textual units within his "boundaries" making up the EDUs).

As per **claim 5**, Marcu teaches claim 4, and further teaches wherein the one or more operations iteratively (p.110 para 4 his "algorithm" iterations as operations iteratively), perform comprise a shift operation and/or one or more reduce operations (p.110 para 4 "if a valid text structure can be associated with span [l,h], it must be built on top of the two substructures of two adjacent subspans"-the Examiner interprets the this step as a shift operation).

As per **claim 6**, Marcu teaches claim 5, and further teaches the reduce operations comprise one or more of the following six operations: reduce-ns, reduce-sn, reduce-nn, reduce-below-ns, reduce-below-sn, reduce- below-nn (p.20.the combination of his "With it's distant orbit" and "-50 percent farther from the sun than earth" in his "elaboration" set, to "With its distant orbit-50 percent further from the sun than Earth." as reduce ns operation).

As per **claim 8**, Marcu teaches claim 1, and further teaches wherein determining a discourse structure comprises incrementally building a discourse tree for the input text segment (p.125 Fig. 3.15).

Art Unit: 2654

As per **claim 9**, Marcu teaches claim 8, and further teaches incrementally building a discourse tree for the input text segment comprises selectively combining elementary discourse trees (EDTs) (Fig. 3.15 "a") into larger discourse tree units (p.125. Fig 3.15).

As per **claim 10**, Marcu teaches claim 8, and further teaches incrementally building a discourse tree for the input text segment comprises performing operations on a stack (p.110 para 4 "if a valid text structure can be associated with span [l,h], it must be built on top of the two substructures of two adjacent subspans"-the Examiner interprets this as stacking) and an input list of elementary discourse trees (EDTs) (Fig. 3.15. his "first, second, third, and fourth" discourse units as the input list of elementary discourse trees) , one EDT for each elementary discourse unit (EDU) in a set of EDUs corresponding to the input text segment (ibid).

As per **claim 11**, Marcu teaches claim 10, and further teaches prior to determining the discourse structure for the input text segment (p.123 para. 3 his "naturally occurring text" does not have the discourse structure yet, (3.112)), segmenting the input text segment into EDUs and inserting the EDUs into the input list (ibid, p.123 the information within his brackets as EDU's, p.125 Fig. 3.15- his "first, second, third, and fourth" discourse units as the input list of elementary discourse trees, wherein the Examiner interprets each unit as being inserted into an input list of EDU's to be used for determining the discourse structure for the input text segment)

As per **claim 12**, Marcu teaches claim 1, and claim 12 sets forth limitations similar to claims ^{9 DLS} ~~10~~ and 11, and is thus rejected for the same reasons, Marcu further

Art Unit: 2654

teaches wherein determining the discourse structure for the input text segment further comprises: segmenting the input text segment into elementary discourse units (EDUs) (see claim 11); incrementally building a discourse tree for the input text segment by performing operations on the EDUs to selectively combine the EDUs into larger discourse tree units (see claim 9); and repeating the incremental building of the discourse tree until all of the EDUs have been combined (p.125. his "Background, Joint, Elaboration "g)" of Fig. 3.15-single discourse tree as per claim 22).

As per **claim 13**, Marcu teaches claim 12, and further teaches wherein segmenting the input text segment into EDUs is performed by applying a set of automatically learned (learned implying predetermined as relating to claims 23 and 24) discourse segmenting decision rules to the input text segment (p. 7. paras 4, 5, "The automatic derivation of text structures", p.71, para 2, "...text structures can be automatically derived using constraint-satisfaction techniques." the "textual units" in para 2 interpreted as EDUs, p.76 para 4-p.77 para 1-"algorithm iterates over each non-elementary textual span [l,h] and builds a constraint C that captures..." interpreted as part of the automatic learned discourse segmented decision rules.

As per **claim 14**, Marcu teaches claim 13, and further sets forth limitations similar to claim 1, and thus is rejected for the same reasons.

As per **claim 15**, Marcu teaches claim 1, and further teaches wherein the input text segment comprises a clause, a sentence, a paragraph or a treatise (p.18. para 1, and section "2.1").

As per **claim 16**, Marcu teaches a computer-implemented text parsing method comprising:

generating a set of one or more discourse segmenting decision rules based on a training set (p.165-Fig. 5.1-"text T" as the training set", "1-17" as the rules, p.10 para. 2); and

determining boundaries in an input text segment by applying the generated set of discourse segmenting decision rules to the input text segment (p.9 para. 1-2-"each cue phrase with ...the determination of the boundaries of the elementary textual units found in its vicinity" as building the annotated text segment-the elementary textual units within his "boundaries", p.171 section 5.3.1).

As per **claim 17**, Marcu teaches claim 16, and further teaches wherein determining boundaries comprises examining each lexeme in the input text segment in order (p.37 his sequence of textual units as lexemes in order- p.38-p.39-his "leftmost position and rightmost position interpreted as boundaries, p.39 para. 1, p.171 section 5.3.1 his left to right "fashion").

As per **claim 18**, Marcu teaches claim 17, and further teaches assigning, for each lexeme, one of the following designations: sentence- break, EDU-break, start-parenthetical, end-parenthetical, and none p.171-174 his "actions").

As per **claim 19**, Marcu teaches claim 17, and further teaches wherein examining each lexeme in the input text segment comprises associating features with the lexeme based on surrounding context (ibid, ie p.174 "the action that the shallow

analyzer should perform in order to determine the boundaries of the textual units found in it's vicinity").

As per **claim 20**, Marcu teaches claim 16, and further teaches wherein determining boundaries in the input text segment comprises recognizing sentence boundaries, elementary discourse unit (EDU) boundaries, parenthetical starts, and parenthetical ends (ibid, p.174 (5.10) brackets as EDU boundaries, p.172 last paragraph his boundaries of parenthetical units).

As per **claims 21 and 22**, claims 21 and 22 set forth limitations similar to claims 12 and are thus rejected for the same reasons and under the same rationale.

As per **claims 23, 24 and 25**, claims 23, 24 and 25 set forth limitations similar to claims 13 and 2 and are thus rejected for the same reasons and under the same rationale.

As per **claim 26**, claim 26 sets for limitations similar to claims 6 and 2, and is thus rejected for the same reasons and under the same rationale.

As per **claim 27**, sets forth limitation similar to claims 9, 10, and 13 as described below and is thus rejected for the same reasons and under the same rationale:

- a plurality of automatically learned decision rules (see claim 13);

- an input list comprising a plurality of elementary discourse trees (EDTs), each EDT corresponding to an elementary discourse unit (EDU) of an input text segment (see claims 9 and 10);

- a stack for holding discourse tree segments while a discourse tree for the input text segment is being built (see claims 9 and 10) ; and

a plurality of operators for incrementally building the discourse tree for the input text segment by selectively combining the EDTs into a discourse tree segment according to the plurality of decision rules and moving the discourse tree segment onto the stack (see claims 9 and 10).

As per **claim 28**, claim 28 sets for limitations similar to claim 11, and is thus rejected for the same reasons and under the same rationale.

As per **claim 29**, claim 29 sets forth limitations similar to claims 1, 13 and 14, and is thus rejected for the same reasons and under the same rationale.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Corston et al. (US 6,112,168) teaches automatically recognized the discourse structure of a body of text, using parse trees, EDUs, and EDTs.
- Takeshita et al. (US 5,642,520) teaches recognized discourse structure of language data.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M. Spooner whose telephone number is 571/272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571/272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2654

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lms
8/1/05

Donald L. Storm
PATENT EXAMINER
AU 2654